



UNIVERSITI PUTRA MALAYSIA

**IMPACT OF INVESTMENT INFLOWS
ON REGIONAL DISPARITY IN INDONESIA**

MUHAMMAD FIRDAUS

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ON REGIONAL DISPARITY IN INDONESIA**

By

MUHAMMAD FIRDAUS

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**

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in fulfilment of the requirement for the degree of Doctor of Philosophy

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AUGUST 2006

Chairman : Associate Professor Zulkornain Yusop, PhD

Faculty : Economics and Management

Some tactical policies related to regional development, whether they were intended or not, were implemented since in the early 1970s. Moreover some policies have been formulated in 1990s to reduce regional disparities. However, they are more in normative level than implementation. An increasing level of regional income inequality, which accompanied the rapid economic growth, shows the failure of some those policies. The large differences in economic indicators among provinces in Indonesia are no doubt due to the very significant inequality of investment inflows. The problem of economic disparity across Indonesia will still exist. This study aims to analyze the disparity of regional economy by testing the income convergence; to identify the relationship between regional income and investment inflows and to find the determinants of foreign investment inflows into provinces.

The shortcomings of the cross-sectional approach have advocated the time-series estimation. However the time-series estimates may be subject to problems of identification and estimation induced by simultaneity bias or endogeneity of variables observed. Based on such disadvantages, both static and dynamic panel data methods are employed to satisfy the objectives of this study.

This study shows that static and dynamic panel data approach give the different results of convergence examination. Consistent with the theory, the OLS and fixed-effects estimators provide the upper and lower bounds. The first-differences generalized method of moments (FD-GMM) provides invalid estimators which are lower than the coefficient from the fixed effects estimators due to the weak instruments problem. The system-GMM (SYS-GMM) estimators are found to be unbiased, consistent and valid. They show that convergence process prevails among provinces in Indonesia for the period 1983 – 2003. However the speed of convergence is .29 percent, which is relatively very slow compared to other studies in developing countries. The model suggests that regional income and investment inflows show the positive and significant relationship. The SYS-GMM are also the most preferred model for finding the determinants of foreign investment inflows. The results of this study show that factors which are statistically significant to attract the foreign investors to come to a province are market size (regional GDP), level of economic development (agriculture's share), infrastructure (electric supply) and education level attainment.

Abstrak tesis ini dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

**KESAN KEMASUKAN PELABURAN ASING
PADA KEIDAKSEIMBANGAN KAWASAN DI INDONESIA**

Oleh

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Beberapa polisi taktikal berkaitan pembangunan rantau, samada secara langsung atau tidak, telah mula dilaksanakan bermula awal 1970-an. Bagaimanapun, beberapa polisi yang lain telah diformulasikan pada 1990-an untuk mengurangkan ketidakseimbangan di rantau ini. Namun, formulasi tersebut adalah melebihi tahap normal untuk tujuan implementasi. Kenaikan paras pendapatan yang tidak seimbang di rantau ini adalah sejajar dengan pembangunan pesat, hanya menunjukkan kegagalan sebahagian polisi ini. Perbezaan besar dalam penanda ekonomi antara daerah di Indonesia menunjukkan ketidakseimbangan aliran masuk modal. Masalah ketidakseimbangan ekonomi di Indonesia masih wujud. Objektif kajian ini adalah untuk mengkaji taburan pendapatan antara daerah dengan pemeriksaan hipotesis *convergence*, mengkaji pertalian antara pendapatan daerah dengan kemasukan pelaburan dan menganalisa faktor kemasukan pelaburan asing ke dalam daerah di Indonesia.

Kekurangan pendekatan *cross-sectional* telah menyokong model jangkaan siri-masa. Bagaimanapun jangkaan siri masa boleh menjadi suatu permasalahan di dalam pengenalpastian dan jangkaan yang diaruhkan oleh parameter dalaman yang dikaji. Berdasarkan kepada kekurangannya, kedua-dua metode panel statik dan dinamik digunakan untuk tujuan mencapai objektif kajian ini.

Hasil kajian ini mendapati bahawa pendekatan data panel secara statik dan dinamik telah memberikan keputusan pemeriksaan *convergence*. Sejajar dengan teori, jangkaan kesan OLS dan tetap menyediakan sempadan atas dan bawah. Perbezaan pertama untuk metode dan kaedah moment pembezaan pertama (FD-GMM) telah menyediakan jangkaan yang tidak relevan dan lebih rendah berbanding koefisien daripada jangkaan kesan tetap disebabkan masalah instrumentasi yang lemah. Jangkaan daripada system GMM (SYS-GMM) didapati tidak bias, konsisten dan memberikan keputusan yang relevan. Ia telah menunjukkan bahawa proses *convergence* berlaku di antara daerah di Indonesia untuk tempoh 1983-2003. Bagaimanapun, halaju pengumpulan adalah setinggi 0.29% yang mana adalah perlahan di bandingkan dengan kajian di negara membangun yang lain. Kajian ini mendapati pertalian yang positif antara pendapatan daerah dengan kemasukan pelaburan. SYS-GMM adalah merupakan model yang paling sesuai di dalam menentukan faktor-faktor kemasukan pelaburan asing. Keputusan kajian ini menunjukkan faktor yang signifikan dari aspek statistik untuk menarik pelabur asing ke daerah yang mempunyai saiz pasaran (GDP serantau), paras pembangunan ekonomi (perkongsian agrikultur), infrastruktur (bekalan elektrik) dan tahap pelajaran penduduk.

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I certify that an Examination Committee has met on 18 August 2006 to conduct the final examination of Muhammad Firdaus on his Doctor of Philosophy thesis entitled "Impact of Investment Inflows on Regional Disparity in Indonesia" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of Examination Committee are as follows:

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declared that it has not been previously and currently submitted to any other degree at Universiti Putra Malaysia or other institutions.



MUHAMMAD FIRDAUS

Date: 14/11 - 2006

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CHAPTER I

INTRODUCTION

Background

Indonesia is one of the largest countries in Asia. It had a population of over than 230 million citizens in 2003, which is the fourth most populated country in the world after China, India and the USA. The Indonesian archipelago comprises of 13,677 islands, which cover nearly 2 million square kilometers from Aceh, (the far-western province), to Papua or Irian Jaya (the far-eastern province).

Total population of Indonesia in the latest census year 2000 was about 206.3 million. At the end of 2005 the population is estimated to reach 242 million. In 2003, total household was about 56.6 million. Around 90.5 percent of 100.3 million labor force has been working in 2003 (Central Agency for Statistics, 2005). About 10 percent of labor force was still looking for jobs. The majority (76.8 %) of workers was low educated or under senior high school. From about 90 millions people who have been working, more than 46 percent of them worked at agricultural sector. The government of Republic of Indonesia continuously increases the quality of human resources. In 2003, the illiteracy rate was quite high. The percentage of illiterate people aged 10 years and over was about 12 percent in rural area and 5 percent in urban area. Indonesian economy was quite stable during 2002 up to 2005. Based on GDP at 1993 constant prices, economic growth in year 2003 was about 4.1 percent. This number increased to about 5 percent in 2005. Per capita national income is Rp 7.1 million in 2003 or US \$ 800.

Geographically Indonesia is divided into two regions: western part and eastern part of Indonesia (Figure 1). In many studies, western part of Indonesia (KBI) consists of some provinces which are located in Sumatra and Java islands while provinces in Borneo, Sulawesi and other islands are grouped as eastern part of Indonesia (KTI). The provinces in KBI are relatively more developed than provinces in KTI. However some provinces in KTI, e.g. South Sulawesi and Bali are also developed as they become the center of trade and tourism since a long time ago. These provinces and regions are highly diverse states in terms of ethnic, religious, cultural and economic makeup.

After the country proclaimed independence on August 17, 1945, the central government was politically and economically dominated by Java, while the outer islands tended to be neglected. Early in the industrialization period in 1950s, spatial dispersion of manufacturing industries was highly skewed with the excessive predominance of Java as opposed to the other islands. West Java accommodated 30 percent of all large and medium-size firms in manufacturing such as footwear, tobacco, textiles and food products; whereas Central Java and East Java accommodated 25 percent each. Outside Java, only North Sumatra housed a significant number of manufacturing establishments. The pro-Java policy distressed the outer islands and induced regional separation movements in the late 1950s. Some of these revolts known as vertical conflict still exist in some rich resources provinces such as *Aceh Merdeka*, *Riau Merdeka* and *Papua Merdeka*.

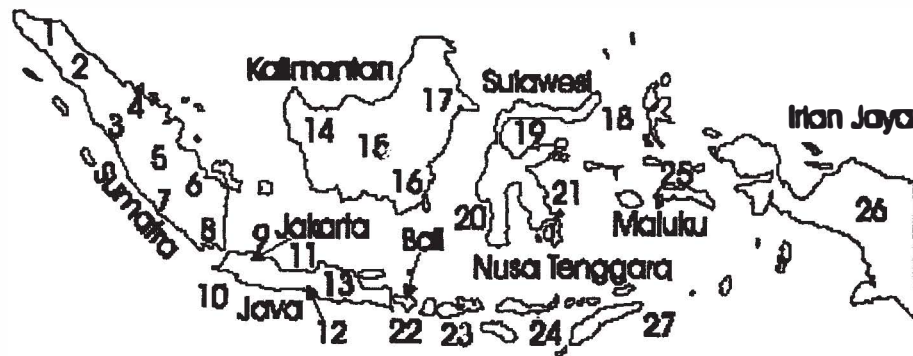


Figure 1: Map of Indonesia
(Source: Statistical Central Agency Indonesia, 2000)

I. Western part of Indonesia

- | | |
|------------------|------------------|
| 1. Aceh | 2. North Sumatra |
| 3. West Sumatra | 4. Riau |
| 5. Jambi | 6. South Sumatra |
| 7. Lampung | 8. Bengkulu |
| 9. Jakarta | 10. West Java |
| 11. Central Java | 12. Jogjakarta |
| 13. East Java | |

II. Eastern part of Indonesia

- | | |
|------------------------|---------------------------|
| 14. West Borneo | 15. Central Borneo |
| 16. South Borneo | 17. East Borneo |
| 18. North Sulawesi | 19. Central Sulawesi |
| 20. South Sulawesi | 21. South East Sulawesi |
| 22. Bali | 23. West Nusa Tenggara |
| 24. East Nusa Tenggara | 25. Maluku |
| 26. Irian Jaya (Papua) | 27. East Timor (Excluded) |

Suharto's new order regime that took over from Sukarno's regime in 1968 started to implement planned development based on five-year period (PELITA). One of the crucial issues was regional equalization policy. This was aimed to subsidize regional governments in reducing regional economic inequalities. This concern was rooted in the widening of income gaps that started early in the first PELITA (1968-1973).

The problem of economic disparity across Indonesia will still exist. An economic underlay of unequal natural endowment between the regions continually challenges economic progress achieved. The unequal distribution of natural resources, especially oil and natural gas, and the uneven development of trade and industrial centers that are concentrated in a few regions, have created growth enclaves. It is important to analyze the results achieved by regional policies intended to reduce the disparity, mainly through empirical observation on regional economies. This can be achieved by testing the convergence of income among provinces or regions. However, convergence hypothesis test still receives a little attention of the regional economy analysis in less developed countries such as Indonesia. Thus this study by employing panel data approaches attempts to test the convergence hypothesis.

As hypothesized in this study, the important element that widens the disparities among regions is investment inflows, as an engine of growth. In today's Indonesian economy, regions are increasingly varying with each other for greater amount of investment inflows. Some provinces or regions absorbed much more

than other. Investigation on relationship between investment inflow and regional economy performance has significant role in economic development. This means that regional economic growth can be treated as a catalyst in attracting investment inflow; also investment inflow stimulates economic growth (Borensztein, 1998). Assessing empirically why there is such an unequal pattern is almost non-existent; either from analysts or policy makers. This study attempts to shed light on this issue to identify some factors that influence foreign investors to come to a province or a region. Some hypotheses center on economic dimensions and infrastructure development are tested to answer what the determinants of the spatial distribution of investment inflows are.

All above works show that the study of regional income disparity is significant and will receive a great deal of public attention. This study is also important due to anticipate serious threats of regional disparities. Where the inability of Indonesia to deal with such inequities creates potential for disunity, and in extreme case for disintegration, as happened to the province of East Timor. Thus, some suggestions are required to achieve more balanced regional development.

Statement of the Problem

Since the late 1960s, provincial GDP data have consistently indicated significant differences in GDP between the provinces that are well endowed with natural resources and those that are densely populated and/or sparsely endowed with natural resources. The gross domestic product of Province Jakarta (without oil and gas) in 2003 was 14.8% of the total Indonesian GDP, which represents slightly

over 0.03% of Indonesia's land area. While the third widest province, Central Borneo, that represents about 4.68% of Indonesia's land, accounted for a mere 0.94% of total Indonesian GDP (Statistical central agency Indonesia, 2004).

Table 1 shows Indonesia's distribution of per capita GDP without oil and gas among 26 provinces from 1969 to 2003. The interesting observation is that per capita GDP of three provinces: North Sumatra, Jakarta and East Borneo remained above the average Indonesia per capita GDP. On the other hand the poorest region (East Nusa Tenggara) earned only about one fourteenth of the richest province (Jakarta), which remained below 50% of average Indonesia per capita GDP. Moreover the imbalanced distribution of regional output is also shown in Figure 2. It represents the coefficient of variation (CV) of per capita provincial income from 1969-2001. In the early development period the CV was quite low, then it increased sharply. However in the late 1970s the CV decreased as the rich provinces in out of Java Island began to enjoy some benefits from oil and gas revenues. It again increased gradually from 1979 to 2001.

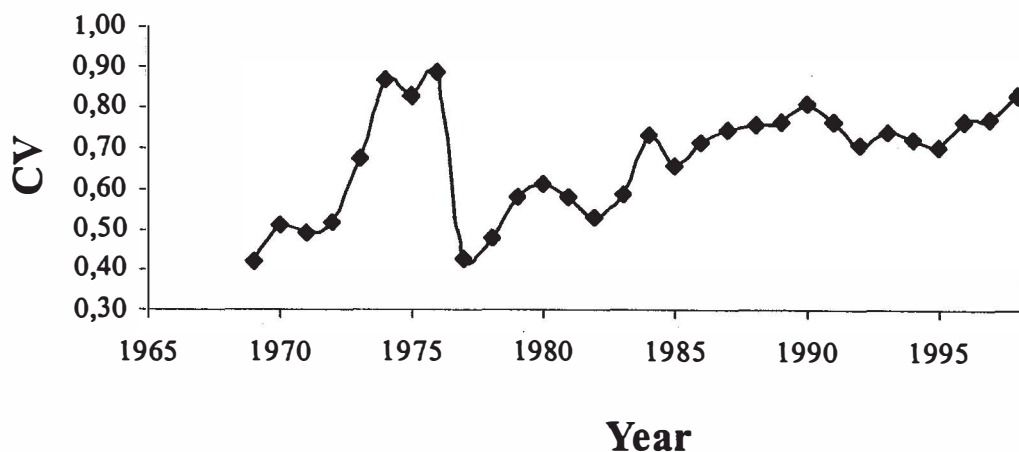


Figure 2: Coefficient of Variation of per Capita Provincial GDP in Indonesia, 1969-2001

**Table 1: Percentage of per Capita Provincial GDP^a to
the Average Indonesia per Capita GDP, 1969-2003**

Province	1969 ^b	1975	1980	1985 ^c	1990	1995	2000	2003
Western part of Indonesia								
Aceh	89.83	59.20	98.83	134.41	132.06	114.99	97.61	89.99
North Sumatra	120.54	129.41	100.28	93.38	100.82	103.91	108.67	110.92
Riau	117.40	124.75	132.98	71.96	68.98	105.22	113.75	109.06
West Sumatra	95.16	64.88	78.80	91.84	89.31	86.01	93.26	93.25
Jambi	156.36	86.45	84.78	70.54	70.36	67.63	67.72	66.66
South Sumatra	185.15	164.82	131.21	98.31	83.61	80.39	78.97	86.60
Lampung	95.26	73.15	68.66	50.47	51.65	53.16	55.55	56.74
Bengkulu	93.83	61.32	65.16	70.65	64.54	61.05	62.12	62.62
Jakarta	227.27	212.89	253.30	343.40	356.77	394.26	381.34	384.91
West Java	70.91	72.43	69.43	79.68	78.94	84.83	82.45	83.45
Central Java	74.73	62.32	62.31	71.95	70.74	69.50	69.03	69.10
Yogyakarta	80.83	56.27	59.95	86.24	84.80	83.54	75.51	85.65
East Java	87.12	67.60	82.51	90.49	90.56	89.91	85.60	84.71
Eastern part of Indonesia								
Bali	90.21	80.96	79.71	107.39	116.24	119.20	126.60	121.54
West Borneo	98.26	66.73	86.60	82.95	94.48	89.10	95.32	95.65
Central Borneo	116.21	97.54	152.62	138.29	128.51	116.81	114.42	121.74
South Borneo	90.46	106.65	85.41	98.96	96.52	96.53	94.24	92.55
East Borneo	163.86	470.25	327.00	331.46	321.10	316.30	335.80	307.59
North Sulawesi	113.21	88.99	102.83	65.48	62.82	64.01	69.81	74.21
Central Sulawesi	48.22	61.51	69.44	57.81	57.15	55.16	56.95	61.09
South Sulawesi	76.19	69.80	76.25	60.44	60.40	60.57	63.79	66.94
South East Sulawesi	49.07	54.58	57.15	50.54	53.58	48.56	47.58	50.77
West Nusa Tenggara	63.63	36.47	44.28	46.27	44.24	41.88	45.52	44.99
East Nusa Tenggara	48.59	42.21	42.09	40.94	36.99	37.30	40.65	41.62
Maluku	93.02	95.31	102.46	73.18	77.52	75.57	57.95	52.73
Papua	54.69	93.51	85.97	92.99	107.30	84.63	79.79	84.91

Source: Statistical Central Agency Indonesia, 1969-2004 (Processed)

^a without oil and gas; ^b based on the current price; ^c based on the 1993 price

Steady changes in the economic structure, from agricultural sector to industrial sectors, are clearly observed from national data. The share of agriculture, including forestry and fishery declined from more than 50 percent in 1969 to merely about 15 percent in 2003. Accordingly, the share of industrial sector, such as manufacturing, electricity, gas and water supply, and construction increased significantly from 12 percent in 1969 to about 34 percent in 2003. The share of labor force by each sector also indicated a change in the economic structure. The agricultural labor force steadily decreased from 72 percent in 1969 to about 43 percent in 2003, while that in industry and services sectors increased from 9 and 20 percent in 1969 to about 15 and 36 percent in 2003, respectively. However, there were big differences in the degree of structural transformation across provinces where the contribution of manufacturing varied significantly. In the most industrialized region, Java Island (except Yogyakarta), about 14 percent of GDP in 1969 was generated from the industrial sector, and in 2003 it increases to more than 38 percent. On the contrary, in Nusa Tenggara industrial sector generated only 13 percent of GDP in 2003.

Substantial diversities in the demographic factors are also found in Indonesia. Population distribution has been highly skewed. Although the Java Island occupies about 6.7 percent of the total land area of the country, until now it is populated by nearly 60 percent of the Indonesian citizens. The outer islands are thus characterized by labor scarce economy, while Java is labor abundant. Although the inter-regional wage differentials were narrowed in recent years, there still exists a difference of more than 50 percent.

Some tactical policies related to regional development, whether they were intended or not, were implemented since the early 1970s. They were aimed to promote a more balanced regional development. From the fiscal perspective, expanded fiscal revenue during the oil boom in 1970s enabled the transfer of massive resources to islands that were heavily relied on suffering non-oil export sectors. Massive resources were transferred through a government-based channel, which contributed to developing regional infrastructure, such as roads, schools and health facilities. They were represented in government expenditure from budget allocation of central government into provinces. Some remarkable social progresses were made in this period. Some tactical programs were intended also to achieve more equitable regional development, such as Inpres (instruction of President) program for under developed villages. It was a part of fiscal decentralization policy that allows regional government to have greater autonomy in reducing poverty in their respective areas.

By the mid-1980s, as the oil prices dropped, some policy reforms are taken to improve efficiency and reduce dependency on oil revenues. Substantial reforms were made in the areas of financial markets and banking, as well as agriculture, education, and health services. Then in the late 1980s Indonesia entered a more advanced phase of development. The economic policies were directed to improve employment and income opportunities by opening up the economy and increasing the means for all citizens to participate in, and benefit from economic growth. These situations at the national level influenced the development of regional economies. Furthermore some policies have been formulated in 1990s to reduce

regional disparities in Indonesia (Takeda and Nakata, 1998). However, they are more in normative level than implementation such as:

1. develop infrastructure in less developed regions and stimulate private sector investment to build the regional characteristic industries;
2. provide fiscal transfer to local governments in due consideration of disparities and characteristics, and
3. enhance the administrative capabilities of regional government by strengthening the human resource development.

However an increasing level of regional income inequality, which accompanied the rapid economic growth shows the failure of some of the above policies. This significance of regional disparity is also indicated by the coefficient of variation (CV) for per capita regional GDP among provinces compared to some developing countries as shown in the Table 2. In 1997, it was .83 while the other countries varied from .186 to .797. Shankar and Shah (2001) also reported that economies of developing countries were much more unequal than the developed ones.

**Table 2: CV of Per Capita Provincial GDP
in Some Developing Countries, 1997**

Unitary System		Federal System	
Indonesia	.827	Russia	.625
Thailand	.797	Brazil	.563
Philippines	.530	Mexico	.473
China	.692	India	.387
Uzbekistan	.353	Pakistan	.186

Source: Shankar (2001)